Fermilab
FY2002 Self-assessment
Process Assessment Report
For
Division/Section__Particle Physics Division___

Date__September 16, 2002

Division/Section performing assessment

Particle Physics Division

Name of organization that owns assessed process

Experimental Physics Projects Department

Organization Strategy

How does the assessed process contribute to the accomplishment of the owning organization's mission?

Part of the mission of the Experimental Physics Projects department is to bring together for a period of several years, physicists at an early stage of their career, having recently (usually just) obtained a Ph.D. in experimental particle physics, and an experiment in need of such manpower. These post-doctoral researchers are highly sought after by essentially all experiments, as they have enough technical and physics analysis expertise to work largely without direction, they invariably work very hard and they are the cream of the Ph.D.'s.

Names of Personnel on Assessment team

Michael G. Albrow, David Christian

Name of process assessed

Experimental Research Associate Hiring

Brief description of process to be assessed

This Department is constantly searching for Research Associates to staff its approved level of effort in this specific job category. The process starts with advertisement of the vacant positions, processing of applications, requesting and receiving references, selecting candidates for interview, arranging a 2-day interview schedule including a talk by the candidate, deciding whether to offer the candidate a position, if they accept arranging their commencement and integration into Fermilab, mentoring the process of their finding an experiment with a good match between needs and expertise.

1. Are metrics associated with this process? If so, what are they?

Yes, one. It results from a combination of several *indicators*, as specified below:

Indicator 1: The number of Fermilab Research Associates in house or with offers, with a maximum as specified by the Fermilab Directorate of 24

Outstanding	Excellent	Good	Marginal	Unsatisfactory
24	21 - 23	18 – 20	15 – 17	0 – 14

Indicator 2: Gender Diversity of Research Associates: percentage of females

Outstanding	Excellent	Good	Marginal	Unsatisfactory
40 – 50%	30 – 40%	20 – 30%	10 – 20%	0 – 10%

Indicator 3: Ethnic Diversity of Research Associates: percentage of blacks and Latin-Americans

Outstanding	Excellent	Good	Marginal	Unsatisfactory
25-20%	20-15%	15-10%	10-5%	5-0%

The above bands are highly debatable. Although we do not have precise figures at present, the percentage of particle physics Ph.D. recipients who are in this category is certainly less than 20% and therefore the outstanding class would represent a bias in favor of this category.

Indicator 4: Performance of hired Research Associates, evaluated after 1 year: percentage of Research Associates evaluated by supervisors to be very good, excellent or outstanding.

Outstanding	Excellent	Good	Marginal	Unsatisfactory
90 – 100%	80 – 90%	70 – 80%	60 – 70%	0 – 60%

Indicator 5: Success in finding position at end of term. This is related to hiring in the sense that it monitors the quality of the Research Associates we hire. The indicator chosen is the percentage of RA's who at, or before, the end of their term are employed either in another position in particle physics at a University or National Laboratory, or in industry through their choice.

Outstanding	Excellent	Good	Marginal	Unsatisfactory
100%	> 95%	90-95%	85-90%	< 85%

Indicator 6: Response time:

Outstanding: Acknowledge receipt of application within one business day, decision on whether to interview within one week of receipt of reference letters, conduct interviews within one month of interviewees available date, offer letter (if appropriate) within one week of interviews.
Excellent: As *outstanding* but replace *one day,week or month* with *two days, weeks or months*
Good: As *outstanding* but replace *one* with *three*
Marginal: As *outstanding* but replace *one* with *four*
Unsatisfactory*:* As *outstanding* but replace *one* with *"greater than 4"*

The **Metric** for the process is calculated by awarding marks 4,3,2,1,0 for outstanding,

excellent, good, marginal and unsatisfactory respectively and averaging.

2. What are the names of the procedures associated with this process?

Research Associate Recruitment

3. Are these procedures being followed? Are they current?

Yes. This exercise revealed that the procedures were slightly out of date in places and needed to be updated. This assessment has therefore led to an opportunity for improvement that has already been implemented. The attachment gives the revised procedure.

4. Describe the methodology used to assess this process.

The present assessment has been carried out by the two assessors (see above) working through all steps of the hiring process, in consultation with the Department's Administrative Assistant and the secretary of the Research Associate Committee. However in fact the process is continuously assessed by the Department Head in consultation with the Research Associates Committee and with feedback from the responsible staff in the various experiments (all experiments have one or sometimes two Fermilab scientists with special responsibility for the Research Associates on their project). Adjustments to the process have been minor over the past two years.

5. Results of the assessment:

Indicator 1: Outstanding

Comment: The number of RAs in house and with offers fluctuates continuously. Momentarily we satisfy the outstanding criterion, but over most of the past year it has been "excellent" or "good".

Indicator 2: Excellent

The proportion of female RA's is 7/23 which, while not 50%, still satisfies our class:

Indicator 3: Marginal

This is marginal because we have no black Research Associates and two Latin-American Research Associates. However if "ethnic diversity" is used the picture changes greatly; among the 21 in house on 3/29/02 we have American, Chinese, Japanese, Egyptian, Philippino, Argentinean, Brazilian, Spanish, Russian, German, Dutch and British (see attachment).

Indicator 4: Outstanding

Evaluation of current Research Associates:

A very relevant question is whether the Research Associates we hire are the cream of the crop. The current annual evaluation exercise, in which the RA's supervisor and (sometimes) mentor, together with the head of the department attached to the experiment, review and report on the work of the RA over the past year. (RA's who started less than six months ago are

exempt). In every case this year the RA has been reported on as being very good, excellent or outstanding.

Indicator 5: Outstanding

Over the last 5 years, 1997 – 2001, 33 Research Associates have moved on to other positions. 26 (79%) went to University or national laboratory position in particle physics in the US or overseas, 7 (21%) went to industry through choice and all immediately found a good position.

Indicator 6: Excellent

On the response time, in most instances the criteria of the outstanding indicator are met. However in some cases one or more of the steps might fall in the excellent indicator.

a. *Are the existing process controls adequate?*
   The existing process controls are considered adequate.

b. *Have any notable practices been identified?*
   No

c. *Have any major deficiencies been identified?*
   No

d. *Is the process working effectively? What improvements can be made?*
   The process is working effectively.

e. *How does current performance compare to last assessment, other similar labs, industry?*
   This is the first assessment for this Department. We do not have access to any assessment of an equivalent process at comparable National Laboratories (in particular Argonne National Lab, Brookhaven National Lab, Stanford Linear Accelerator Center SLAC). Universities are in a somewhat different position, as they normally would have very few (less than 5) post-docs who would be hired to work on a specific experiment (or two). The situation is not directly comparable.

f. *What are the results for the metric?*

The metric, given by averaging the indicators according to the prescription given above, gives an average of 3.1 = **Excellent.**

g. *Adjectival grade achieved*

Excellent.

Identified opportunities for improvement

Improvement opportunities from the current assessment or a statement of optimal performance for the process. Lack of budgeted funds to accomplish improvement actions must be documented. Projected savings and benefits from improvement actions must be documented. Also, some improvement actions may not be done due lack of economic benefit.

A survey of ethnicity of graduate students and Ph.D. recipients in experimental high energy physics would determine whether there is an imbalance in the RA hiring process. The funds for the RA recruitment process are currently adequate for the process. We do not identify any projected savings, or economic benefits from improvements.

Schedule for implementation of improvements

Survey of ethnicity of graduate students by June 2003.

Status of improvements from previous assessment

None, because no previous assessment

Attachments (supporting data, worksheets, reports, etc.

1) Copy of advertisement from journals
2) Copy of advertisement from Fermilab web page
3) Research Associate Recruitment procedures (updated)
4) Current RA situation sheet.
5) Typical RA Candidates status sheet
6) Nationalities of current RA's
7) RA Candidates History 1/1/98 – 08/15/02
8) Announcement for RA interview (note distribution)
9) Typical interview schedule
10) Typical offer letter, with list of projects
11) Announcement of arrival of new RA.

Attachment 1:

POSTDOCTORAL POSITIONS IN EXPERIMENTAL PARTICLE PHYSICS

The Fermi National Accelerator Laboratory (Fermilab) has openings for postdoctoral Research Associates in experimental particle physics. The Fermilab research program includes experiments with the 2 TeV proton - antiproton collider, neutrino oscillation experiments, fixed target experiments and astroparticle physics experiments. There are positions for recent Ph.D.s to join the collider program which has completed its upgrade and is taking data. There are also opportunities to join the neutrino oscillation experiments MiniBooNE and MINOS, the particle production experiment MIPP, the Cryogenic Dark Matter Search, the Pierre Auger Observatory (cosmic ray) project and data analysis of fixed target experiments. Opportunities also exist to participate in the future BTeV, CKM and LHC-CMS experiments. Positions associated with the experimental program are also available in the Computing Division for candidates interested in modern computing techniques applicable to HEP data acquisition and analysis.

Successful candidates are offered a choice among interested Fermilab experiments, and typically have the opportunity to participate in detector development and commissioning in addition to experiment operation and data analysis. Appointments are normally for three years with the possibility of extension. Every effort will be made to maintain support for a Fermilab RA until she or he has the opportunity to produce physics results.

Applications and requests for information should be directed to **Dr. Michael Albrow, Head - Experimental Physics Projects Department, Particle Physics Division {albrow@fnal.gov}, Fermi National Accelerator Laboratory, MS 122, P.O. Box 500, Batavia, IL 60510-0500.** Applications should include a curriculum vita, publication list and the names of at least three references. EOEM/F/D/V.

Fermilab

A U.S. Department of Energy Laboratory

Attachment 2:

POST DOCTORAL POSITIONS IN EXPERIMENTAL PARTICLE PHYSICS...The Fermi National Accelerator Laboratory (Fermilab) has openings for postdoctoral Research Associates in experimental particle physics. The Fermilab research program includes experiments with the 2 TeV proton - antiproton collider, neutrino oscillation experiments, fixed target experiments and astroparticle physics experiments. There are several positions for recent Ph.D.s to join the collider program which has completed its upgrade and begun data taking. There are also opportunities to join the neutrino oscillation experiments MiniBooNE and MINOS, the Cryogenic Dark Matter Search, the Pierre Auger Observatory (cosmic ray) project and data analysis of completed fixed target experiments. Opportunities also exist to participate in detector R&D for the future BTeV, CKM and LHC-CMS experiments. Positions associated with the experimental program are also available in the Computing Division for candidates interested in modern computing techniques applicable to HEP data acquisition and analysis. Successful candidates are offered their choice among interested Fermilab experiments, and typically have the opportunity to participate in detector development and commissioning in addition to experiment operation and data analysis. Appointments are normally for three years with one-year renewals possible thereafter. Every effort will be made to maintain support for a Fermilab RA until candidate has the opportunity to produce physics results. Applications and requests for information should be directed to Dr. Michael Albrow, Head-Experimental Physics Projects Department, Particle Physics Division {Albrow@fnal.gov}, Fermi National Accelerator Laboratory, MS 122, P.O. Box 500, Batavia, IL 60510-0500. Applications should include a curriculum vita, publication list and the names of at least three references. EOE M/F/D/V.

Attachment 3:

Research Associate Recruitment

Physics Ph.D. majors applying for post-doctoral positions in Experimental High Energy Physics.

- Applicants send a letter of application with their CV to the Head of the Experimental Physics Projects Department. *(Files are only accessible to the Administrative staff.)*
- A thank you for your interest letter and request for the names of three referees are sent to the applicant. *(See attached example.)* The referees are asked for letters.
- Upon receipt of the resume and three letters of reference, the Department Head in consultation with the Research Associate Committee decides if the applicant should be invited for interviews. (See attached example of a thank you letter to be sent to the referees.) If the applicant is not to be invited he/she is sent a letter so stating. If there is sufficient interest in interviewing the applicant, the department secretary schedules a two day visit to the laboratory.
- Copies of the applicant's file are forwarded to representative physicists in the Particle Physics Division and appointments are scheduled.
- The applicant is required to give an informal one-hour talk which representatives of all experiments and RA's are invited to attend. This is scheduled by the Experimental Physics Projects secretary, who also schedules the two days of interviews, reserves a conference room and sends an announcement by e-mail.
- Upon completion of the interviews, the Department Head (based on input from the interviewers and discussion with the Research Associate Committee) either sends an offer letter or a rejection letter. *(See attached examples.)*
- Copies of the offer letter and candidate's packet are sent to the Division Head for signature, the Employment Office (E. Verbeck) and to the Visa Office (B. Myers for B. Jurkiw), if appropriate.
- If the applicant is not suitable for PPD, but may be suitable for another division, the application letter is forwarded to the appropriate people and a letter of explanation to the applicant. *(See attached.)*
- The applicant is reimbursed for travel expenses incurred for the interview. (Accommodations, travel, etc., arrangements are made by the department secretary if assistance is needed.) All costs are charged to budget code AHE.
- The to-join expenses are processed by Personnel and charged to budget code AHE.
- A Research Associate position is normally for three years with the possibility of an extension. If the Research Associate has had his/her Ph.D for more than two years, the initial term will be two years. If the applicant is extended, a letter is generated from the Experimental Physics Projects Department Head with copies to the appropriate people. *(See attached example.)*

Attachment 4:

Experiment	RA	Lederman	CD-RA
D0 (6)	J. Estrada Y. Kulik M. Wobisch M. Tomoto M. Mulders Y. Maravin	B. Quinn	R. Illingsworth
CDF (9)	M. Bishai R. Erbacher (J. Goldstein) C-J S. Lin M. Martinez-Perez P. Merkel A. Meyer T. Nelson J. Thom	J. Dittman N. Kuznetsova	D. Litvintsev
Auger BTeV + FOCUS CDMS KTeV MiniBoone	A. Chou M. Wang X. Qi F. Garcia	B. Fleming	
Here/Undecided	H. Meyer		
Accepted	S. Burdin B. Vachon M. Weber		
Offers Made	M. Yokoyama		
Interviews Completed	B. Reisert (9/10/02) O. Gonzalez-Lopez (9/17/02)		
Invited	J. Kasper (9/24/02)		

Attachment 5:

Research Associate Candidates

APP. DATE	CANDIDATE	PH.D	REFEREES	STATUS
Active Files:				
06/25/02	LIKHODED, Serge DESY – Zeuthen, Germany	02	*W. Lohmann S. Ting *A. Zaitsev	Awaiting reference letter
06/21/02	NANKOV, Nikolay U of Giessen	02	H. Wollnik *H. Geissel H. Weik *A. Proykova *K. Peach	Reviewing 9/23/02
08/15/02	WOO, Jong-Kwan UCLA	02	D. Cline P. Picchi *C. Kim	Awaiting reference letters
08/16/02	ZHANG,Jinlong Colorado State U	02	*W. Toki *J. Harton *R. Wilson	Reviewing 9/23/02

Interviews:	Interviews Completed:	Offers Made:	Offers Accepted:	Closed Files:
KASPER, J. (9/24/02)	REISERT, B. (9/10/02) GONZALEZ-LOPEZ, O. (9/17/02)	YOKOYAMA, M.	BURDIN, S. ILLINGWORTH, R. (CD) VACHON, B.	ARDASHEV, K.

Attachment 6:

Of the 21 Research Associates in house, 3/29/2002 there are:

1 Argentina
2 Spain
2 Russia
4 Germany
1 Japan
2 Holland
1 Egypt
4 USA
1 UK
1 Brazil
1 Philippines
1 Chinese

Attachment 7:

RA Candidates History

1/1/98 – 08/15/02

324	RA Applicants
230	We declined to interview
18	Invited but Applicant declined
88	We interviewed
37	No offer after interview
48	We made offers
26	Accepted our offer
25	Declined our offer
1	Undecided

Attachment 8:

Fermilab

Experimental Physics Projects

September 17, 2002

To: Distribution

From: Cathryn Laue
Experimental Physics Projects

Subject: **RA Candidate Interview Announcement**

RA candidate **Jason Kasper** (Northwestern University) will be at Fermilab for interviews on Tuesday, September 24 and Wednesday, September 25, 2002. He will give a talk on Tuesday, September 24th at 11:00 am in the 10th floor conference room (the West Wing). The title of his talk is:

"Search for Two Omega Meson Decays of Charmonium Resonances Produced in Proton-Antiproton Annihilations"

Please contact me at Ext. 3201, or epp_mail@fnal.gov as soon as possible to schedule an appointment. Thank you for your cooperation.

Distribution:
M. Albrow, M/S 122
J. Appel, M/S 122
A. Boehnlein, M/S 357
J. Butler, M/S 122
H. CheungM/S 122
D. Christian, M/S 122
P. Cooper, M/S 122
R. Culbertson, M/S 318
R. Dixon, M/S 122
E. Fisk, M/S 357
M. Diesburg, M/S 357
D. Glenzynski, M/S 318
H. Jensen, M/S 318
D. Jensen, M/S 231
P. Kasper, M/S 341
S. Kwan, M/S 122
T. Liu, M/S 318
J. Lach, M/S 122
P. Mantsch, M/S 367
H. Melanson, M/S 352
H. Montgomery, M/S 105
S. Pordes, M/S 308
R. Raja, M/S 122
G. Rameika, M/S 220
R. Ray, M/S 208
P. Shanahan, M/S 220
L. Spiegel, M/S 205
R. Stefanski, M/S 122
R. Tschirhart, M/S 122
S. Tkaczyk, M/S 318
S. Wolbers, M/S 370
File

/cl
Attachments

Attachment 9:

Interview Schedule
for
Jason Kasper

Day 1	*Tuesday, Sept. 24, 2002*
9:00 - 10:00	Mike Albrow, WH10X, x8618
10:00 - 11:00	Dave Christian, WH10X, x4001
11:00 - 12:15	***Talk - The West Wing (10NW)***
12:15 - 1:00	***Lunch***
1:00 - 2:00	Steve Brice, WH10W, x8748
2:00 - 2:15	Drive/Park
2:15 - 3:15	Lenny Spiegel, x2809 - ***CMS/CDF Lab C-D***
3:15 - 4:15	Harry Melanson, x3383 - ***D0 Building***
4:15 - 4:30	Drive/Park
4:30 - 5:30	Jeff Appel, WH10E, x3922

Interview Schedule
for
Jason Kasper

Day 2	*Wednesday, Sept. 25, 2002*
9:00 - 10:00	Rajendran Raja, WH13E, x4092
10:00 - 11:00	Don Holmgren, WH8E, x2745
11:00 - 12:00	Amber Boehnlein - ***ES&H IH Lab, WH7SE***
12:00 - 1:15	Lunch - Chez Leon
1:15 - 2:00	Deborah Harris, WH12SW, x4545
2:00 - 3:00	Bob Tschirhart, 13SE, x4100
3:00 - 3:15	Drive/Park
3:15 - 4:15	Ray Culbertson, CDF, x6744 - ***Trailer #170F***

If you have any questions please call me at x3201.
Cathryn

Attachment 10:

Fermilab

Fermi National Accelerator Laboratory
P.O. Box 500 • Batavia, Illinois • 60510-0500
Experimental Physics Projects • MS 122 • (630)840-3201

September 23, 2002

Dr.

Dear Dr. :

I am pleased to offer you a Research Associate position in the Fermilab Experimental Physics Projects at a salary of $_____ per year as soon as you are ready to begin. Your appointment at Fermilab will be a three-year term.

If you accept our offer to join Fermilab, you will have a period of about one month after starting work to decide on the research group that you want to join. In any case, I expect you to discuss your prospective choice with Peter Cooper, Dave Christian, Bob Tschirhart and me before confirming your final decision. A list of the current experimental efforts is appended here. In addition to these listed experiments, there are opportunities for joint research on longer term approved and proposed experiments in conjunction with experiments that are in the analysis phase. Examples of such hybrid research programs include: BTeV with the E831 charm photoproduction experiment, proposed future kaon experiments KAMI and CKM with the KTeV experiment or the ongoing kaon experiment (BNL-949) at Brookhaven.

You should have already received information from Beth Verbeck in the Laboratory Services Section on the Laboratory's very generous program of benefits. The Laboratory will pay to-join, via U.S. Carriers, expenses and reasonable household moving costs. Fermilab's standard employment practices apply to this appointment, and can be obtained from the Laboratory Services Section. If for any reason you do not stay on at the Laboratory for at least one year you will be expected to reimburse the Laboratory for these expenses. **Brandi Myers, also of our Laboratory Services Section, will help you in obtaining a valid and appropriate visa, if necessary.**

We at Fermilab were impressed by your thesis research and gratified by your interest in our physics program. Since your experience would broaden in your new endeavors here, I hope you will give our offer serious consideration.

Please feel free to contact me or Peter Cooper or Bob Tschirhart if you have any questions about our offer or your relationship to the Fermilab Experimental Physics Projects.

Sincerely yours,

Michael Albrow, Head
Experimental Physics Projects

MA::cl

Approved:

cc: A. Boehnlein
K. Bretz
D. Christian
J. Cooper
P. Cooper
H. Montgomery
B. Myers
J. Smith
R. Tschirhart
B. Verbeck
File

John Cooper, Head
Particle Physics Division

Attachment 11:

FERMILAB EXPERIMENTS POTENTIALLY AVAILABLE FOR NEW RESEARCH ASSOCIATE PARTICIPATION

Exp. Number	Experiments	Senior Fermilab Contact Person(s)
E799	KTeV	Bob Tschirhart, x4100
E823	*DZero Collider Experiment*	Harry Melanson, x3383
E830	*CDF Collider Experiment*	Ray Culbertson, x6744
E875	*MINOS*	Regina Rameika, x2262
E881	*Pierre Auger Cosmic Ray Detector*	Paul Mantsch, x4940
E891	*Cryogenic Dark Matter Search (CDMS)*	Roger Dixon, x2576
E892	*Compact Muon Solenoid (CMS)*	Dan Green, x3104
E898	*MiniBooNE*	Ray Stefanski, x3872
E921	*CKM*	Peter Cooper, x2629
E907	*Particle Production (MIPP)*	Rajendran Raja, x4092
E918	*BTeV*	Joel Butler, x3148

Attachment 12:

Fermilab

Experimental Physics Projects

September 11, 2002

To: Distribution

From: Michael Albrow, Head
Experimental Physics Projects

Subject: **Arrival of New Research Associate at Fermilab**

This is to advise you that Holger Meyer has taken up his position as a Research Associate at Fermilab. As you know, it is our policy to give each new RA about one month to decide on which group to work with.

You are free and encouraged to talk to Holger about the work on your experiment. If he should decide to join your group, I will expect you to take responsibility for supervising and evaluating his performance as a Research Associate and to help him in a productive direction in his HEP career. Periodically, I expect to talk to you about his progress and growth and will base annual raises and merit promotions heavily on your input.

Holger is located in the Holding Office (temporarily) on Wilson Hall 9East. His phone extension is x4463. You can reach him by e-mail at hmeyer@fnal.gov

I am available for questions.

MA::cl

Distribution

Amber Boehnelin	Paul Mantsch
Joel Butler	Harry Melanson
Dave Christian	Hugh Montgomery
Peter Cooper	Rajendran Raja
Ray Culbertson	Regina Rameika
Roger Dixon	Ray Stefanski
Dan Green	Bob Tschirhart
Hans Jensen	File